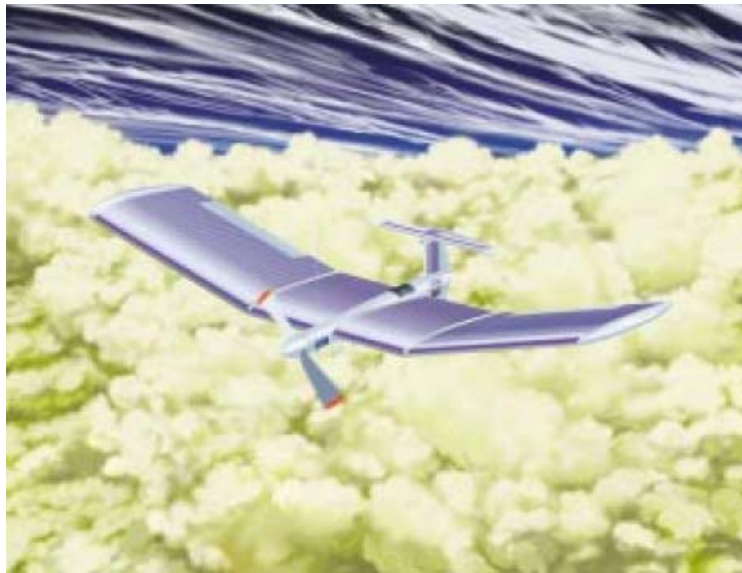


## **Venus as a global warming model for Earth:**

Exploration of Venus is being proposed by Geoffrey A. Landis of GRC, in order to understand its climate and surface, and, ultimately, to return with samples.

The reason we're interested in Venus? It is the best planet to tell us about the past and future climate of Earth; it is the most Earth-like planet in our solar system. Billions of years ago, Venus was the twin of Earth and had oceans. This was possible because about 5 billions years ago our sun was 30% dimmer, so Venus was cooler. Today, Venus's average surface temperature is about 450 degrees Celsius due to an extreme greenhouse effect – the atmosphere is mostly thin carbon dioxide, a greenhouse gas.



Solar airplane. The Venus solar airplane has been redesigned. No photo is available, but it is similar to the one pictured.

The launch would occur in November, 2004, with landing in 2006. Exploration would be done using solar airplanes – Venus is the easiest place to fly solar airplanes. It has a thin, high atmosphere, so there is plenty of sunlight (2.5 times the solar energy of Earth). Also, the thin atmosphere (low pressure) means you hit room temperature once you reach about 50km above the surface. A transport vehicle will bring the solar airplanes and, will drop 4 rovers (each carrying 4 seismographs to deposit), using Kevlar parachutes. Kevlar is high fiber and will last long enough – not burn quickly – to allow devices to make it to the surface. Rovers and seismographs will use sodium sulfur batteries and fuel cells.

NASA will study: climate, atmospheric aerosols, meteorology (air motion and variations), astrobiology (life in cloud layers), radar mapping, and will “sniff” for volcanic activity (sulfur dioxide, etc.). Landis also believes there is a 20% chance there is life in the “room-temperature” atmosphere 50-75km above the surface.